

Hydrodynamical Models of Type II-P Supernova Light Curves

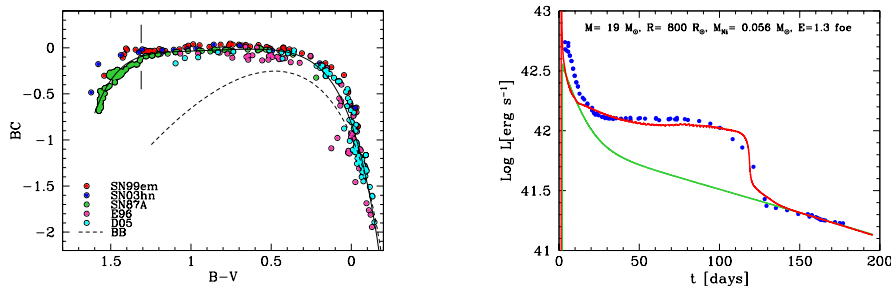
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Summary

We present computations of bolometric light curves (LC) of type II plateau supernovae (SNe II-P) obtained using a newly developed, one-dimensional Lagrangian hydrodynamic code with flux-limited radiation diffusion. We derive a calibration for bolometric corrections (BC) from *BVI* photometry (see figure below left) with the goal of comparing our models with a large database of high-quality *BVI* light curves of SNe II-P. The typical scatter of our calibration is 0.1 mag. As a first step, in our comparison we have determined the physical parameters (mass, radius and energy) of two very well observed supernovae, SN 1999em (see figure below right) and SN 1987A. Despite the simplifications used in our code we obtain a remarkably good agreement with the observations and the parameters derived are in excellent concordance with previous studies of these objects.



References

- Bersten, M., et al. 2009, in preparation
 Bersten, M. C. and Hamuy, M. 2009, ApJ, 701, 200